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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,664	10/11/2005	Masaji Hirota	2185-0778PUS1	2594
2292 7590 01/25/2010 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER				
STALDER, MELISSA A				
ART UNIT		PAPER NUMBER		
1793				
NOTIFICATION DATE		DELIVERY MODE		
01/25/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/552,664

Applicant(s)

HIROTA ET AL.

Examiner

MELISSA STALDER

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/C)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda (JP 11-349579) in view of Schulz (US 6,090,956) in view of Hancock (US 5,367,032). (JP 11-349579) (Citations are to machine English translation of corresponding JP 4013334).

Kuroda teaches an epoxy made with a tungsten compound, hydrogen peroxide, a tertiary amine, and phosphoric acid. Schultz teaches an epoxide made from molybdenum or tungsten, the use of hydrogen peroxide, and a pyridine N-oxide (col. 7, line 27- col. 8 line 24). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the process of Schultz with the process of Kuroda because Kuroda teaches that the use of phosphoric acid increases the consumption of hydrogen peroxide in the reaction (0020-0021). Schultz teaches that the N-oxide increases the activity of the activator precursor and that the pyridine N-oxide is formed from the corresponding tertiary amine (col. 6, lines 1-34).

Hancock teaches the conversion of epoxide to a carbonyl compound using hydrogen peroxide and a phosphorus acid and a catalyst component with tungsten or molybdenum (abstract). The epoxide can be an olefin. The pH is preferably from 0 to 2. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the catalyst of

Kuroda with the conversion reaction of Hancock because it is known in the art that hydrogen peroxide is an oxidizing agent that is capable of creating a carbonyl compound.

Kuroda teaches the use of tungstic acid, phosphotungstic acid sodium, tungstosilicic acid, tungstosilicic-acid sodium, sodium tungstate, phosphotungstic acid, and tungstosilicic acid.

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda (JP 11-349579) in view of Schulz (US 6,090,956) in view of Venturello (US 4,562,276) in view of Venturello (EP 0 232 742) in view of Ishii (US 6,375,922).

Kuroda teaches an epoxy made with a tungsten compound, hydrogen peroxide, a tertiary amine, and phosphoric acid. Schultz teaches an epoxide made from molybdenum or tungsten, the use of hydrogen peroxide, and a pyridine N-oxide (col. 7, line 27- col. 8 line 24). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the process of Schultz with the process of Kuroda because Kuroda teaches that the use of phosphoric acid increases the consumption of hydrogen peroxide in the reaction (0020-0021). Schultz teaches that the N-oxide increases the activity of the activator precursor and that the pyridine N-oxide is formed from the corresponding tertiary amine (col. 6, lines 1-34).

Kuroda does not teach the use of tungsten metal. Venturello '276 teaches a peroxide composition which may contain tungsten metal (col. 3, lines 38-44). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the catalyst of Kuroda with the tungsten taught in Venturello '276 because Venturello '276 teaches that it is known in the art that organo-metal complexes of molybdenum and tungsten are catalysts suited for

epoxidation of olefinic bonds with hydrogen peroxide and heterocyclic nitrogen compounds (col. 2, lines 26-33).

Venturello '742 teaches the production of ketones by means of oxidation of a catalyst with secondary alcohols in the presence of hydrogen peroxide in the claimed ratio. Ishii teaches that when a primary alcohol is used in this type of reaction with hydrogen peroxide that an aldehyde can be formed and therefore it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Ishii depending on the compound to be produced. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the catalyst of Kuroda with the alcohol of Venturello because Venturello teaches the catalytic method of preparing ketones in the reaction with hydrogen peroxide and a secondary alcohol. Also, Venturello teaches that the catalyst can be prepared using a quaternary salt, phosphoric acid, and tungsten.

Further, it would have been obvious to one of ordinary skill in the art at the time of the invention to create a carboxylic acid from the process as the acid contains a carbonyl group and an alcohol and can be produced in the reaction. It would merely require optimization for one of ordinary skill in the art to adjust the ratio to produce the carboxylic acid.

Response to Arguments

The breaking the carbon-carbon bond of the olefin will be inherent in the process of the prior art as the current specification teaches that this limitation is caused by the pH at which the reaction takes place. The pH of the reaction will be between 0 and 2. Additionally, applicant has not addressed specifically why the combinations would not have been obvious. The advisory action stated: Applicant has argued that Kuroda and Hancock would

not be combined however Kuroda teaches the production of an epoxy compound and Hancock teaches how to convert an epoxide compound into a carbonyl-containing compound. This would have been an obvious combination for one of ordinary skill in the art at the time of the invention to make in order to produce a carbonyl compound.

With regard to claim 9, applicant states that the starting materials of Kuroda and Schultz is quite different from that in Venturello. However, applicant has not elaborated on why the combination would not be obvious other than the fact that they are different. Venturello teaches the process that is claimed in present claim 9. Venturello teaches a catalytic method of producing a kethod using alcohol and hydrogen peroxide. It would have been obvious therefore to combine this prior art with the catalyst of Kuroda and Schultz.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELISSA STALDER whose telephone number is (571)270-5832. The examiner can normally be reached on Monday-Friday, 8:00-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Melvin Curtis Mayes can be reached on 571-272-1234. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MS
01-13-10

/Melvin Curtis Mayes/
Supervisory Patent Examiner, Art Unit 1793